

## **REMARKS**

Claims 1, 3-23, and 26-31 are pending. Claims 1, 3, 17, 18, and 20 have been amended, claims 2, 19, 24, and 25 have been canceled, and new claims 26-31 have been added to recite more specific features of the inventions defined in the independent claims.

At the outset, it is noted that the Examiner withdrew the indication of allowability of the claims in the previous Office Action. The indication of allowability was not withdrawn based on any new prior art as applied to the independent claims. On the contrary, the Examiner expressly acknowledged that the cited references still do not teach or suggest all the features in the independent claims, which teaching or suggestion is a necessary requirement for establishing a *prima facie* case of obviousness under 35 USC § 103(a).

In withdrawing the allowability of the claims, the Examiner merely stated that the omitted features would have been obvious. No reference was cited to support this position. Such an assertion is exactly the type of rejection which the Board and Federal Circuit warned against in such cases as *In re Fine*, 5 USPQ.2d 1596 (Fed. Cir. 1988) and its progeny.

More specifically, the examination guidelines (e.g., MPEP § 2143), the Board's view of these guidelines, and the Federal Circuit all require a patent examiner to cite references which teach or suggest all the features of the claims. In issuing the § 103(a) rejections of the independent claims in the present application, the Examiner did not cite a reference to support his position that all the claimed features are taught or suggested by the cited references.

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Moreover, the Office Action appears to be incomplete. For example, on page 3, claims 1, 8-10, and 21-23 appear to be rejected based on Sharma. However, the Examiner then discusses the Chheda patent in connection with these claims. It therefore appears that the rejections of claims 1, 8-10, and 21-23 are intended to be based on the Sharma-Chheda combination mentioned in the previous Office Action.

Also, the Examiner never explicitly mentions what rejection(s) is/are applied to claims 3, 5, and 11-14. However, one of the Sharma or Chheda patents (or in some cases no reference at all) is discussed relative to these claims 3, 5, and/or 11-14. Applicants assume that it was the Examiner's intention to apply the § 103(a) rejection of claims 1, 8-10, and 21-23 to claims 3, 5, and 11-14 as well.

Still further, claim 4 was never rejected based on any prior art. In fact, the Examiner never mentioned this claim in the body of the Office Action. Notwithstanding the incomplete Office Action, Applicants maintain the claims as presented herein are patentable.

Claim 1 recites a method for performing a handoff operation between different mobile networks. This operation involves three handoff procedures performed in succession.

The first handoff is performed from a first base station of a first communication network to a first sector of a gateway base station while maintaining a frequency of the first base station. A hard handoff is performed (1) from the first sector of the gateway base station to a second sector of the gateway base station in a way that involves "*changing the frequency of the first base*

*station to a frequency of a second base station different from the frequency of the first base station.”* The second handoff is performed from the second sector of the gateway base station to the second base station (2) “*while maintaining the frequency of the second base station,*” wherein (3) *each of the first and second sectors of the gateway base station comprise an overlap area of the first and second base stations.* The three features enumerated above are not taught or suggested by the cited references.

The Sharma patent discloses performing three handoffs as a mobile unit moves through cells of different communication systems. (See column 11, lines 50-63 with reference to Figure 8). A soft handoff performed when the mobile unit moves from position (1) in first cell 802B to sector j in second cell 804B. This handoff is performed while maintaining a frequency F2.

When the mobile unit moves from the first sector j to a second sector k, the Sharma patent does not disclose that a hard hand off is performed. Moreover, Sharma discloses that the frequency F2 is maintained when this sector change is made. See column 11, lines 50-54: On the other hand, if the mobile unit originates a call at position (1) on carrier frequency F2 in cell 802B then soft hand will be performed from cell 802B to cell 804B sector j to cell 804B sector k on carrier frequency F2. (Emphasis added). However, claim 1 requires that when a mobile terminal moves between sectors of the gateway base station, a hard handoff is performed from the frequency of the first base station to a different frequency of the second base station. Thus, Sharma is different from the claimed invention in this respect.

Moreover, Sharma does disclose performing a hard handoff, but the hard handoff of Sharma is different from the one recited in claim 1. Specifically, Sharma's hard handoff is performed while the mobile unit remains in the same sector - from sector k in cell 804B to the same sector k, e.g., position (2) in Figure 8. When this occurs, a hard handoff is performed from cell 804B, sector k to cell 804A, sector k, and the frequency is changed from frequency F1 to frequency F2. This is different from the invention defined in claim 1.

That is, claim 1 recites that its hard handoff involves changing the frequency of the first base station to a frequency of a second base station different from the frequency of the first base station." To meet these features, the hard handoff performed in Sharma must change frequency of cell 802B (F2) to the frequency of cell 806 (F1), but the exact opposite is true. In performing its hard handoff, Sharma discloses changing the frequency from F1 to F2. (See column 11, lines 54-56). Thus, while Sharma discloses performing a hard handoff, that handoff is different from the one recited in claim 1.

Finally, Sharma discloses performing a soft handoff when the mobile unit moves to position (3) in cell 806. This handoff is performed while maintaining frequency F2, which is the operating frequency of the first base station in cell 802B. (See column 11, lines 56-58). This is different from the invention defined in claim 1. That is, claim 1 recites that its second handoff is performed "while maintaining the frequency of the second base station," which is recited to be different from the frequency of the first base station.

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These differences between claim 1 and Sharma are summarized below, with the differences highlighted in bold text:

Claim 1

first handoff → inter-sector hard handoff → second handoff.  
  
**1<sup>st</sup> frequency maintained**      **1<sup>st</sup> frequency changed to 2<sup>nd</sup> frequency**      **2<sup>nd</sup> frequency maintained**

Sharma

first handoff → inter-sector hard handoff → second handoff.  
  
**1<sup>st</sup> (F2) frequency maintained**      **2<sup>nd</sup> frequency (F1) changed to 1<sup>st</sup> frequency (F2)**      **1<sup>st</sup> (F2) frequency maintained**

Moreover, claim 1 recites that “each of the first and second sectors of the gateway base station comprise an overlap area of the first and second base stations.” These features are not taught or suggested by Sharma. In Sharma, each of sectors j and k shown in Figure 8 of Sharma overlap with only one of the first and second base station, not both as required by claim 4. In the Office Action, the Examiner acknowledged these differences.

However, the Examiner then merely indicated that such features would have been obvious and cited a lack of unexpected results. These reasons do not provide a sufficient basis for substantiating the § 103(a) rejection. That is, the Examiner cited no reference to back up his assertion that above-noted features of claim 1 would have been obvious. Furthermore, the Examiner appeared to derive his assertion of obviousness from reading Applicants' specification, namely managing a smooth handoff. See Paragraphs [16] and [46].

Still further, as the Board and Federal Circuit have made plainly clear, a finding of unexpected results is not the proper standard for determining unpatentability under § 103(a). Rather, the proper standard for determining obviousness includes a showing that the cited references objectively teach or suggest all the features recited in the claims. See MPEP § 2143. There are numerous cases that also support this position. By the Examiner's own admission, the Sharma patent does not provide an objective teaching or suggestion of all the features in claim 1, and neither does the Chheda patent.

The Chheda patent was cited for its disclosure of performing handoff operations based on threshold values used in pilot signal strength measurements. Chheda does not teach or suggest the features of claim 1 missing from the Sharma patent.

For the foregoing reasons, it is respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness of claim 1 and its dependent claims. Accordingly, claim 1 and its dependent claims should be furthered to allowance.

Claim 9 recites that performing the inter-sector hard handoff comprises “changing a frequency of the first sector equal to the frequency of the first base station to a frequency of the second sector equal to the frequency of the second base station after performing the first handoff.” From the discussion provided above, it is apparent that these features of the invention are not taught or suggested by the cited references, whether taken alone or in combination.

Claims 11, 13, 17, 21, and 23 recite features similar to those which patentably distinguish claim 1 from the cited references. In addition, claim 21 recites “wherein the gateway base station prevents a ping-pong effect during the handoff of the call from the first communication network to the second communication network.” These features are also not taught or suggested by the cited references.

Claims 6, 7, and 15-20 were rejected under 35 USC § 103(a) for being obvious in view of a Sharma-Chheda-Jalloul combination. This rejection is traversed on grounds that the Jalloul patent does not teach or suggest the features of base claims 1, 11, and 17 missing from the Sharma and Chheda patents.

New claims 26-31 have been added to the application.

Claim 26 recites that “the first and second sectors of the gateway base station overlap one another.” These features are not taught or suggested by the cited references, e.g., in Sharma, sectors j and k are mutually exclusive and therefore do not overlap one another as required by claim 26.

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Claim 27 recites that “the cell regions of the first and second base stations overlap one another.” These features are also not taught or suggested by the cited references. Claims 28-31 recite similar features depending from other independent claims.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and timely allowance of the application are respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

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